TIMERS
KS-14799, L1 AND L2
REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

1.01 This section covers the KS-14799, L1 and L2 timers.

1.02 This section is reissued to cover the KS-14799, L2 timer, to revise the method of check for the timing requirements, and to revise the list of tools. Detailed reasons for reissue will be found at the end of the section.

1.03 Reference shall be made to Section 020-010-711 covering general requirements and definitions for additional information necessary for the proper application of the requirements listed herein.

1.04 Before doing any work on the timer, take it out of service in accordance with approved procedures.

1.05 ***One dip of oil*** for the purpose of this section is the amount of oil retained on a KS-14162 brush after being dipped into the oil to a depth of 3/8 inch and then scraped on the edge of the container to remove the surplus oil. There should not be sufficient oil adhering to the brush to form a drop on the end of the bristles.

2. REQUIREMENTS

2.01 ***Lubrication***

(a) Each of the following parts shall be lubricated with one dip of KS-7470 oil.

(1) ***Front Bearing:*** Fig. 1(A) — Apply to camshaft between collar and end plate.

(2) ***Rear Bearing:*** Fig. 1(B) — Apply to thrust washer.

(b) ***Recommended Lubrication Intervals:*** The parts in (a) shall be lubricated at intervals of 12 months.

2.02 ***Record of Lubrication:*** During the period of installation, a record shall be kept by date of the lubrication and this record shall be turned over to the telephone company with the equipment. If no lubrication has been done, the record shall so state.

2.03 ***End Play of Camshaft:*** The camshaft shall have perceptible end play in its bearings, but this end play shall not exceed

Max 0.015 inch

Gauge by eye and feel.

2.04 ***End Plate Mounting:*** The pairs of end plate mounting nuts on the studs adjacent to the camshaft shall be positioned to hold the end plate free from warp.

Gauge by eye.

2.05 ***Cam Position:*** Fig. 1(C) — With the end play of the camshaft taken up in either direction, each switch actuator shall overlap its associated cam.

Gauge by eye.

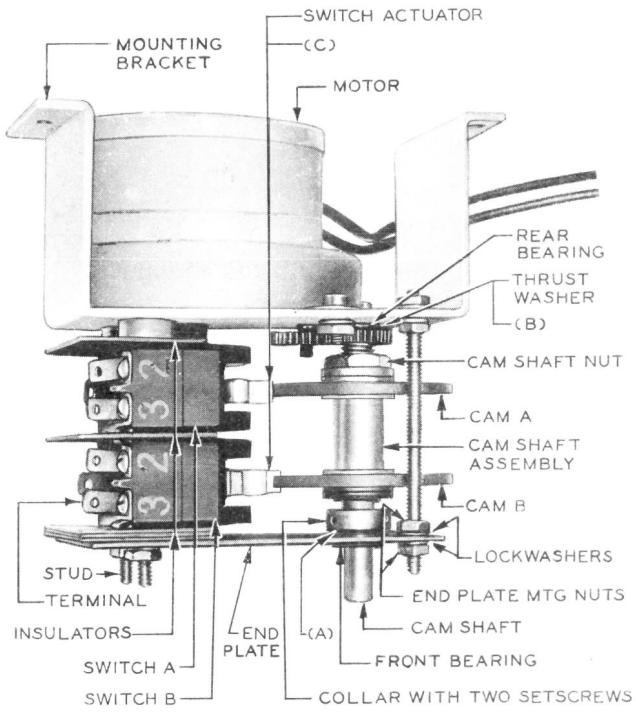

Fig. 1 – KS-14799 Timer (L1 shown)

2.06 ***Timing Requirements***

(a) ***Accuracy of Timer:*** The camshaft shall make one complete revolution in 100 seconds ±1 second

Use the KS-3008 stop watch.

Check this requirement as follows.

(1) Prepare the timer as follows. Tag the switch leads. Disconnect the terminals with leads from the switches, using the 3-inch C screwdriver. Remount the terminal mounting screws. Start the timer motor.

(2) Connect the leads of the KS-14250, L1 flashlight to the mounting screws of terminals 1 and 3 of switch A. Start timing when the flashlight lights. Stop timing when the flashlight relights after it has been extinguished once.

(b) ***Switch A Contact Closure:*** Contacts 1 and 3 shall close for

Min 5 seconds
Max 8 seconds

during a complete revolution of cam A.

Use the KS-3008 stop watch.

Check this requirement as covered in (a)(1) and (2), except start timing when the flashlight lights and stop when it is extinguished.

(c) ***Switch B Contact Closure:*** Contacts 1 and 3 shall close for

Min 2 seconds
Max 4 seconds

during a complete revolution of cam B.

Use the KS-3008 stop watch.

Check this requirement as covered in (b), except connect the flashlight leads to terminals 1 and 3 of switch B.

(d) ***Contact Sequence:*** Contacts 1 and 3 of switch A shall close

Max 1.4 seconds

before contacts 1 and 3 of switch B open.

Use the KS-3008 stop watch.

Check this requirement as follows.

(1) Prepare the timer as covered in (a)(1).

(2) Connect the leads of a KS-14250, L1 flashlight to the mounting screws of terminals 1 and 3 of switch A. Connect the leads of a second flashlight to the mounting screws of terminals 1 and 3 of switch B. Start timing when the flashlight connected to switch A lights. Stop timing when the flashlight connected to switch B is extinguished.

3. ADJUSTING PROCEDURES

3.001 ***List of Tools, Gauges, Materials, and Test Apparatus***

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
43	3/16- and 1/4-Inch Hex. Open Double-End Flat Wrench
245	3/8- and 7/16-Inch Hex. Open Double-End Flat Wrench
R-2961	Allen Socket Screw Wrench
KS-14162	Brush
KS-14250, L1 (2 reqd)	Flashlight [with two 893 cords equipped with two 360A tools (1W13A cord), and two KS-6278 connecting clips]
—	3-Inch C Screwdriver (or the replaced 3-inch cabinet screwdriver)
—	4-Inch E Screwdriver (or the replaced 4-inch regular screwdriver)
GAUGES	
KS-3008	Stop Watch or Equivalent
MATERIALS	
KS-7470	Oil
—	Hardwood Toothpick, Flat at One End and Pointed at the Other

3.002 When it is necessary to rotate the camshaft assembly manually, rotate it only in a clockwise direction, as viewed from the front, by applying approximately equal force to both cams with the fingers.

3.01 ***Lubrication*** (Reqt 2.01)

(1) Lubricate parts as specified in 2.01, using the KS-14162 brush.

3.02 Record of Lubrication (Reqt 2.02) (no procedure)

3.03 ***End Play of Camshaft*** (Reqt 2.03)

(1) If the end play requirement is not met, manually rotate the camshaft assembly until the two collar setscrews are accessible. Loosen the setscrews with the R-2961 wrench. Reposition the collar as required and securely tighten the setscrews.

3.04 ***End Plate Mounting*** (Reqt 2.04)
3.05 ***Cam Position*** (Reqt 2.05)

(1) If the end plate is warped, reposition the pairs of end plate mounting nuts on the studs adjacent to the camshaft as required. Use the 43 wrench. Recheck requirement 2.03.

(2) If a switch actuator does not overlap its associated cam, reposition one or more of the insulators with respect to the switch in order to bring the switch actuator into proper relation with the cam. To reposition an insulator, remove the four outer end plate mounting nuts and lockwashers using the 43 wrench. Grasp the outer end of the camshaft and remove the end plate and the camshaft assembly. Take care not to lose the thrust washer on the inner end of the camshaft. This washer may adhere to the rear bearing. Remove the two end plate mounting lockwashers remaining on the studs. Reposition the insulators and switches on the studs as required, first noting the position of the insulators and switch terminals with respect to the mounting bracket in order to insure that the parts will be properly remounted. If there is insufficient slack in the switch leads to permit removal of the switch from the studs, tag and disconnect the terminals with leads from the switch using the 3-inch C screwdriver. After the insulators and switches have been repositioned, remount all the other parts in the reverse order of their removal. Make sure that the thrust washer is on the inner end of the camshaft and that the projecting portion of the front bearing is on the outside of the end plate. Reconnect any leads which were removed. Recheck requirements 2.03, 2.04, and 2.05.

3.06 ***Timing Requirements*** (Reqt 2.06)

(1) ***Accuracy of Timer:*** If this requirement is not met, replace the motor.

(2) ***Switch A and B Contact Closure:*** If the duration of contact closure for either switch A or B is not as required, replace the camshaft assembly. If the contacts of a switch remain continually closed or open for a complete revolution of the associated cam, replace the switch.

(3) ***Contact Sequence:*** If the contact sequence is incorrect, reposition cam A relative to cam B as follows. Hold the cams stationary and loosen the camshaft nut sufficiently to permit cam A to be rotated slightly on the shaft with some bind. Using the 245 wrench, loosen the nut, which has a left-hand thread, by turning it counterclockwise as viewed from the front of the timer. While holding cam B stationary, reposition cam A as required. Then hold both cams stationary and securely tighten the nut by turning it clockwise. Recheck the requirement.

REASONS FOR REISSUE

1. To cover the KS-14799, L2 timer.
2. To revise the method of check for the timing requirements (2.06).
3. To revise the list of tools (3.001).
4. To revise the procedure for cam position (3.05).